DRAFT
ACTION MEMORANDUM

REMOVAL OF PETROLEUM FREE-PRODUCT

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) CALVERTON, NEW YORK

PREPARED FOR
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP 82
LESTER, PENNSYLVANIA 19113-2090

by

TETRA TECH, NUS
661 ANDERSEN DRIVE
PITTSBURGH, PENNSYLVANIA

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DRAFT

ACTION MEMORANDUM FOR THE REMOVAL OF PETROLEUM FREE-PRODUCT AT NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) CALVERTON, NEW YORK

1.0 PURPOSE

The purpose of this Action Memorandum (AM) is to provide documentation regarding the proposed removal actions described herein for four sites at the Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, New York.

NWIRP Calverton is located in Suffolk County on Long Island, approximately 70 miles east of New York City. NWIRP Calverton was operated by Northrop Grumman Corporation for the Navy until 1996. The facility was constructed in the early 1950s for use in developing, assembling, testing, refitting, and retrofitting of Naval combat aircraft. As the lead agency, the Navy has determined that an interim removal action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) might be appropriate for free product plumes that have been observed at three of the four sites and is suspected to be present at the fourth.

The following summarizes the findings and recommendations of the EE/CA performed for Site 2 - Fire Training Area, Site 6A - Fuel Calibration Area, Site 7 - Fuel Depot, and Site 10B - Engine Test House. The Navy conveyed the majority of the property that comprised NWIRP Calverton to the Town of Riverhead on September 10, 1998. However, the area bounded by the fence line shown on Figure 1-1 will be referred to as either NWIRP Calverton or the facility for the purpose of this document. The Navy retained ownership of all impacted lands associated with these four sites. None of these sites are listed on the National Priorities List.

2.0 SITE 2 - FIRE TRAINING AREA

SITE CONDITIONS AND BACKGROUND

The Fire Training Area (Site 2) is located on the eastern side of a 9-acre clearing in the south central portion of the facility. Site 2 is bordered to the west, north, and east by property owned by the Town of Riverhead. Land use south of the site includes a former Northrop Grumman office building, a golf course, and a wooded area. Groundwater flow from Site 2 is to the southeast. The office building and golf course have potable water wells. There are no residences immediately adjacent to the site. There are no sensitive ecological habitats (i.e., wetlands, surface water bodies) on or adjacent to the site.

The site was used by Northrop Grumman and Navy crash rescue crews as a training area. Waste fuels, oils, and waste solvents were floated on water within either an earthen berm or curbed, concrete pit and ignited for training exercises. Previous investigations have determined that up to 450 gallons of waste solvents were mixed with up to 2,100 gallons of waste fuel per year. These activities, in addition to leaks from underground and aboveground fuel storage tanks formerly located at the site, have resulted in soil and groundwater contamination, including a plume of free petroleum product that floats on the water table. It is this free product plume that is being addressed by the proposed interim removal action. This is not the first removal activity performed at Site 2.

Approximately 360 cubic yards of petroleum contaminated soil have been excavated and removed from the site.

A pilot-scale air sparging/soil vapor extraction system is currently operating at the site to remove volatile organic compounds (VOCs) from the subsurface As of December 1996, the system has removed approximately 80 pounds of total VOCs and an estimated 25,000 pounds of organics have been destroyed through biodegradation.

A distinct free product plume has been consistently observed at Site 2, with product thickness ranging from trace amounts to more than 1 foot. A free product recovery system was in operation at the site from 1987 through 1993 and resulted in the removal of approximately 270 gallons of petroleum product. Section 3.2 of the EE/CA provides more detailed information regarding previous removal actions and site investigations. Section 3.3 provides a discussion of the nature and extent of free product contamination.

The New York State Department of Environmental Conservation and the Suffolk County Department of Health Services is involved in the investigation and remediation of this site.

THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

The free petroleum product acts as a constant source of groundwater and soil contamination and, as such, poses a threat to the environment. The location of the plume corresponds with the location of the most contaminated groundwater. Hydraulically down gradient land uses include a former Northrop Grumman office building and a golf course, both of which have potable water wells. The free product plume and resulting groundwater contamination has not been detected in either of these wells, but there is a potential threat to public health. A risk assessment concluded that soils and groundwater at the site could potentially pose unacceptable human health risks for current maintenance workers and hypothetical future residents.

ENDANGERMENT DETERMINATION

Actual or threatened releases of pollutants or contaminants from this site, if not addressed by implementing the response action selected in this AM, may present an imminent and substantial endangerment to public health, or welfare, or the environment. However, the primary requirement for implementation of this remedy is to allow subsequent remediation to proceed at Site 2.

PROPOSED ACTIONS AND ESTIMATED COSTS

Oil skimming with groundwater depression is the recommended removal action for Site 2. Groundwater depressions will be generated in newly installed wells to concentrate free product for removal and control the migration of the plume. Floating skimmers with in-line pneumatic pumps installed in each of the wells will remove product. Fixed canisters will be installed in additional wells located on the periphery of the plume, and removed and emptied by hand, as needed. Recovered product will be stored on site throughout the duration of the removal action. Approximately 90 to 180 gallons of groundwater will be removed from the subsurface per minute. Groundwater will be treated by granular activated carbon units and discharged to the ground surface under a SPDES permit.

This removal action will contribute to future remedial actions by removing the free product plume thereby clearing the site for final soil and groundwater remediation.

Oil skimming without groundwater depression was also evaluated as a potential removal action at Site 2. While it is lower in cost than the recommended removal action, it is less effective in the long term because it would remove less of the free product and cannot prevent further migration of the plume. For a detailed discussion and comparative analysis of both alternatives, see Sections 3.6 and 3.7 of the EE/CA. Cost estimates for these alternatives are provided in Appendix B of the EE/CA.

Applicable requirements include 40 CFR 280 Subpart F, Release Response and Corrective Action for UST Systems and Article 12 of the Suffolk County Sanitary Code, Toxic and Hazardous Materials Storage and Handling Controls. Relevant and appropriate requirements include New York State Regulation Parts 75 through 758, State Pollutant Discharge Elimination System. New York State Petroleum Contaminated Soil Guidance Policy should also be considered. Tables 2-1 and 2-2 in the EE/CA provided a complete list of Federal and state ARARs and TBCs.

The proposed removal action will require 2 to 4 months for system engineering, 2 to 4 months for installation, and 2 to 4 years of operation.

System capital cost is approximately $480,000 and operation and maintenance costs are approximately $130,000 per year. Additional details regarding the system are provided in Section 3.6 of the EE/CA. A detailed cost estimate is provided in Appendix B.

EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delaying or not implementing the recommended interim removal action will impact future remedial activities at Site 2. In order for soil and groundwater remediation systems to be most effective and require the shortest amount of time, the free product plume must be removed. The plume will act as a continuing source of contamination if it is not mitigated prior to final remedial action implementation.

OUTSTANDING POLICY ISSUES

None.

ENFORCEMENT

This site is being regulated under the Resource Conservation and Recovery Act permit.

RECOMMENDATION

This decision document represents the selected removal action for Site 2 at the NWIRP Calverton, in Calverton, New York, developed in accordance with CERCLA as amended, and not inconsistent with NCP. This decision is based on the administrative record for the site.

3.0 SITE 6A - FUEL CALIBRATION AREA

SITE CONDITIONS AND BACKGROUND

The Fuel Calibration Area (Site 6A) is located in the south central portion of the facility. The site is completely surrounded by property owned by the Town of Riverhead. There are no residences immediately adjacent to the site. There are no sensitive ecological habitats (i.e., wetlands, surface water bodies) on or adjacent to the site.

The site was used in the testing of aircraft and engine systems. Aircraft delivery systems were pressurized with fuel to test for leaks. The testing may have resulted in frequent, small spills to the area's pavement. These activities have resulted in soil and groundwater contamination, including a plume of free petroleum product that floats on the water table. It is this free product that is being addressed by the proposed interim removal action. This is not the first removal activity performed at Site 6A.

A distinct free product plume has been consistently observed at Site 6A, with product thickness ranging from trace amounts to more than 1 foot. Subsurface contamination of soil and groundwater is attributable to petroleum spills resulting from historic site activities. A free product recovery system was in operation at the site from 1987 through 1993. Free product recovery, via hand bailing, continued after the system was shut down. Approximately 1,900 gallons of petroleum product have been removed from the site. Section 4.2 of the EE/CA provides more detailed information regarding previous removal actions and site investigations. Section 4.3 provides a discussion of the nature and extent of free product contamination.

The New York State Department of Environmental Conservation and the Suffolk County Department of Health Services is involved in the investigation and remediation of this site.

THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

The location of the plume corresponds with the location of contaminated groundwater. Soil contamination has been identified at a depth that corresponds to the floating free product and contaminated groundwater. The free petroleum product acts as a constant source of groundwater and soil contamination and, as such, poses a threat to the environment. A risk assessment performed for the site concluded that soils and groundwater pose unacceptable human health risks for a hypothetical future residential land user.

ENDANGERMENT DETERMINATION

Actual or threatened releases of pollutants or contaminants from this site, if not addressed by implementing the response action selected in this AM, may present an imminent and substantial endangerment to public health, or welfare, or the environment. However, the primary requirement for implementation of this remedy is to allow subsequent remediation to proceed at Site 6A.

PROPOSED ACTIONS AND ESTIMATED COSTS

Oil skimming with groundwater depression is the recommended removal action for Site 6A. Groundwater depressions will be generated in newly installed wells to concentrate free product for removal and control the migration of the plume. Floating skimmers with in-line pneumatic pumps installed in each of the wells will remove product. Fixed canisters will be installed in additional wells located on the periphery of the plume, and removed and emptied by hand, as needed. Recovered product will be stored on site throughout the duration of the removal action. Approximately 90 to 180 gallons of groundwater will be removed from the subsurface per minute. Groundwater will be treated by granular activated carbon units and discharged to the ground surface under a SPDES permit.

This removal action will contribute to future remedial actions by removing the free product plume thereby clearing the site for final soil and groundwater remediation.

Oil skimming without groundwater depression and excavation and offsite disposal of contaminated soil were also evaluated as potential removal actions at Site 6A. Oil skimming without groundwater depression, while less expensive than the proposed action, is less effective in the long term because it would remove less of the free product and cannot prevent further migration of the plume. Excavation and offsite disposal of soil containing the free product plume was equally effective and implementable as the recommended removal action, but was more expensive. For a detailed discussion and comparative analysis of all three alternatives, see Sections 4.6 and 4.7 of the EE/CA. Cost estimates for these alternatives are provided in Appendix C of the EE/CA.

Applicable requirements include 40 CFR 280 Subpart F, Release Response and Corrective Action for UST Systems and Article 12 of the Suffolk County Sanitary Code, Toxic and Hazardous Materials Storage and Handling Controls. Relevant and appropriate requirements include New York State Regulation Parts 75 through 758, State Pollutant Discharge Elimination System.

New York State Petroleum Contaminated Soil Guidance Policy should also be considered. Tables 2-1 and 2-2 in the EE/CA provided a complete list of Federal and state ARARs and TBCs.

The proposed removal action will require 2 to 4 months for system engineering, 2 to 4 months for installation, and 2 to 4 years of operation.

System capital cost is approximately $490,000 and operation and maintenance costs are approximately $130,000 per year. Additional details regarding the system are provided in Section 4.6 of the EE/CA. A detailed cost estimate is provided in Appendix C.

EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delaying or not implementing the recommended interim removal action will impact future remedial activities at Site 6A. In order for soil and groundwater remediation systems to be most effective and require the shortest amount of time, the free product plume must be removed. The plume will act as a continuing source of contamination if it is not mitigated prior to final remedial action implementation.

OUTSTANDING POLICY ISSUES

None.

ENFORCEMENT

This site is being regulated under the Resource Conservation and Recovery Act permit.

RECOMMENDATION

This decision document represents the selected removal action for Site 6A at the NWIRP Calverton, in Calverton, New York, developed in accordance with CERCLA as amended, and not inconsistent with NCP. This decision is based on the administrative record for the site.

4.0 SITE 7 - FUEL DEPOT

SITE CONDITIONS AND BACKGROUND

The Fuel Depot (Site 7) is located in what was the geographic center of the facility. There are no residences immediately adjacent to the site. There are no sensitive ecological habitats (i.e., wetlands, surface water bodies) on or adjacent to the site.

The area consists of a large concrete trucking-parking area covering the southern half of the site and a former underground fuel storage area in the north-central portion. The Fuel Depot was used for the storage and distribution of fuel products. Underground storage tanks ranging in size from 4,000 to 50,000 gallons were once located at the site. Site activities have resulted in groundwater contamination by fuels, which may have occurred due to tank and/or pipe leakage, tank overfilling, and surface spills. Two isolated free product plumes have been intermittently observed floating on the water table. It is this free product plume that is being addressed by the proposed interim removal action.

Three removal activities have been performed at the site due to the closure of the underground storage tanks. Free product has been observed at the site at depths ranging from trace amounts to approximately 0.6 feet. Recent observations have detected only trace amounts in scattered wells. As of February 1996, approximately 174 gallons of petroleum product have been removed from the site by hand bailing of existing wells

Section 5.2 of the EE/CA provides more detailed information regarding previous removal actions and site investigations. Section 5.3 provides a discussion of the nature and extent of free petroleum product.

The New York State Department of Environmental Conservation and the Suffolk County Department of Health Services is involved in the investigation and remediation of this site.

THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

The free product that appears to exist at the soil/groundwater interface will continue to act as a source for groundwater contamination. Soil contamination has been identified at a depth that corresponds with the floating free product and contaminated groundwater. A risk assessment concluded that soil and groundwater at the site potentially pose unacceptable human health risks for hypothetical future residential land users.

ENDANGERMENT DETERMINATION

Actual or threatened releases of pollutants or contaminants from this site may present an imminent and substantial endangerment to public health, or welfare, or the environment. However, since the free product plumes do not appear to be a significant source of further soil and groundwater contamination, the threats posed by contamination at this site may be more effectively addressed by a final remedial action.

PROPOSED ACTIONS AND ESTIMATED COSTS

No removal action is recommended for the Fuel Depot at this time because the action oriented alternatives that were evaluated offer only low to moderate effectiveness, but require moderate to high expenditures for installation, operation, and maintenance. Existing groundwater and soil contamination should be further evaluated as part of the Corrective Measures Study planned for the site. The EE/CA recommends that the location and thickness of free product continue to be monitored until final remedial actions are implemented.

Two action oriented alternatives were evaluated for implementation at Site 7. They were oil skimming and oil skimming with groundwater depression. For a detailed discussion and comparative analysis of these alternatives, see Sections 5.6 and 5.7 of the EE/CA. Cost estimates for these alternatives are provided in Appendix D of the EE/CA.

Since there is no or only trace amounts of floating free product, implementation of future remedial actions can proceed as necessary. Tables 2-1 and 2-2 in the EE/CA provided a complete list of Federal and state ARARs and TBCs for this EE/CA.

EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

No action is recommended at this time so this is not of concern at Site 7.

OUTSTANDING POLICY ISSUES

None.

ENFORCEMENT

This site is being regulated under the Resource Conservation and Recovery Act permit.

RECOMMENDATION

This decision document represents the selected removal action for Site 7 at the NWIRP Calverton, in Calverton, New York, developed in accordance with CERCLA as amended, and not inconsistent with NCP. This decision is based on the administrative record for the site.

5.0 SITE 10B - ENGINE TEST HOUSE

SITE CONDITIONS AND BACKGROUND

The Engine Test House (Site 10B) is located in what was once the south-central portion of the facility and is completely surrounded by property owned by the Town of Riverhead. There are no residences immediately adjacent to the site. There are no areas on or adjacent to the site that would be classified as wetlands. There is a surface water drainage ditch on the western edge of the site that discharges to a shallow pond located approximately 900 feet to the south.

The Engine Test House was used to operate jet engines prior to their installation in aircraft. An underground storage tank was formerly located just south of the building. Monitoring at the site has found soil and groundwater contamination that is consistent with petroleum products and the presence of free petroleum product. Floating free product has yet to be observed in any site monitoring wells.

Approximately 80 cubic yards of petroleum contaminated soil were excavated and removed from the site in conjunction with the underground storage tank removal. Subsurface contamination of soil and groundwater is likely attributable to releases from the underground storage tank. Section 6.2 of the EE/CA provides more detailed information regarding previous removal actions and site investigations.

The New York State Department of Environmental Conservation and the Suffolk County Department of Health Services is involved in the investigation and remediation of this site.

THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

Soil contamination has been identified at a depth that corresponds to the area of suspected floating free product and contaminated groundwater. Free product, if present, will continue to act as a source of contamination to these media The contamination is not migrating offsite quickly and is not impacting public health or welfare.

ENDANGERMENT DETERMINATION

Actual or threatened releases of pollutants or contaminants from this site may present an imminent and substantial endangerment to public health, or welfare, or the environment. However, since a free product plume has yet to be observed at Site 10B, it does not appear that there is a source of further soil and groundwater contamination. The threats posed by contamination at this site may be more effectively addressed by a final remedial action

PROPOSED ACTIONS AND ESTIMATED COSTS

No removal action is recommended for the Engine Test House at this time because none of the three action oriented alternatives that were evaluated offer a high level of both effectiveness and implementability. Existing groundwater and soil contamination should be further evaluated as part of the Corrective Measures Study planned for the site. The EE/CA recommends that the site continue to be monitored for the presence of free product until final remedial actions are implemented.

Three action oriented alternatives were evaluated for implementation at Site 10B. They were oil skimming, oil skimming with groundwater depression, and excavation. For a detailed discussion and comparative analysis of these alternatives, see Sections 6 6 and 6.7 of the EE/CA. Cost estimates for these alternatives are provided in Appendix E of the EE/CA.

Since there is currently no floating free product, implementation of future remedial actions can proceed as necessary. Tables 2-1 and 2-2 in the EE/CA provided a complete list of Federal and state ARARs and TBCs for this EE/CA.

EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

No action is recommended at this time so this is not of concern at Site 10B.

OUTSTANDING POLICY ISSUES

None.

ENFORCEMENT

This site is being regulated under the Resource Conservation and Recovery Act permit.

RECOMMENDATION

This decision document represents the selected removal action for Site 10B at the NWIRP Calverton, in Calverton, New York, developed in accordance with CERCLA as amended, and not inconsistent with NCP. This decision is based on the administrative record for the site

DATE

CAPT., CEC, USN
By Direction